

CLAIMS

What is claimed is:

5 *Sub Bm* 1. A medical diagnostic ultrasound catheter for imaging from within a body, the catheter comprising:
 a conductor;
 a shaft surrounding at least a portion of the conductor;
 a non-conductive braid connected with the shaft; and
 an ultrasound transducer connected with the shaft and electrically connected with the conductor.

10 103 2. The catheter of Claim 1 wherein the non-conductive braid comprises a braid of mono-filament material.

103 3. The catheter of Claim 1 wherein the non-conductive braid comprises mono-filament nylon material.

15 ✓ 4. The catheter of Claim 1 wherein the non-conductive braid comprises a material selected from the group consisting of: glass, plastic, nylon and combinations thereof.

✓ 5. The catheter of Claim 1 wherein the non-conductive braid is embedded within the shaft.

20 ✓ 6. The catheter of Claim 1 wherein the shaft is free of electrically conductive material.

✓ 7. The catheter of Claim 1 wherein the shaft comprises a tip portion fused to a body portion, the non-conductive braid connected with the body portion.

25 ✓ 8. The catheter of Claim 1 wherein the non-conductive braid comprises a configuration selected from the group consisting of: spiral, diamond weave and combinations thereof.

✓ 9. The catheter of Claim 1 further comprising a dielectric film adjacent an emitting surface of the ultrasound transducer.

5 *sub 27* ✓ 10. A medical diagnostic catheter for use within a body, the catheter comprising:

an electrical conductor;

a shaft surrounding at least a portion of the electrical conductor; and

a non-conductive insert for providing torque transmission connected with the shaft.

10 *103* 11. The catheter of Claim 10 wherein the non-conductive insert comprises a braid of mono-filament material.

✓ 12. The catheter of Claim 10 wherein the non-conductive insert is embedded within the shaft.

15 ✓ 13. The catheter of Claim 10 wherein the shaft comprises a tip portion fused to a body portion, the non-conductive insert connected with the body portion.

✓ 14. The catheter of Claim 10 further comprising a dielectric film adjacent an emitting surface of a ultrasound transducer, the ultrasound transducer connected with the shaft and electrically connected with the conductor.

20 *Sub A11* ✓ 15. A medical diagnostic ultrasound catheter for imaging from within a body, the catheter comprising:

a shaft;

an ultrasound transducer connected with the shaft;

a lens adjacent the ultrasound transducer; and

a dielectric film adjacent the ultrasound transducer.

25 *≡* 16. The catheter of Claim 15 wherein the dielectric film is positioned between the lens and the ultrasound transducer.

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103 17. The catheter of Claim 15 wherein the dielectric film comprises a tape material.

103 18. The catheter of Claim 15 wherein the dielectric film comprises a polyester film.

103 19. The catheter of Claim 18 wherein the polyester film comprises Mylar.

103 20. The catheter of Claim 15 wherein the dielectric film comprises a film having a thickness less than 7 microns.

✓ 21. The catheter of Claim 15 wherein:
the shaft comprises a tip portion;
the ultrasound transducer connects with the tip portion; and
the dielectric film wraps around a circumference of the ultrasound transducer.

✓ 22. The catheter of Claim 15 wherein the dielectric film is positioned adjacent an emitting surface of the ultrasound transducer.

✓ 23. The catheter of Claim 15 further comprising a non-conductive braid connected with the shaft.

Sub B 24. A medical diagnostic ultrasound catheter for imaging from within a body, the catheter comprising:
a shaft;
an ultrasound transducer connected within the shaft; and
a dielectric film positioned between a portion of the shaft and the ultrasound transducer.

25. The catheter of Claim 24 further comprising a lens adjacent the ultrasound transducer, wherein the dielectric film is positioned between the lens and the ultrasound transducer.

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103 26. The catheter of Claim 24 wherein the dielectric film comprises a polyester film.

103 27. The catheter of Claim 24 wherein the dielectric film comprises a film having a thickness less than 7 microns.

5 28. The catheter of Claim 24 further comprising a non-conductive braid connected with the shaft.

Sub A2 29. A medical catheter for insertion into a body, the catheter comprising:
a shaft; and
a non-conductive braid connected with the shaft to transmit torque to the shaft.

103 30. The catheter of Claim 29 wherein the non-conductive braid comprises a braid of mono-filament material.

103 31. The catheter of Claim 29 wherein the non-conductive braid comprises mono-filament liquid crystal polymer material.

32. The catheter of Claim 29 wherein the non-conductive braid comprises a material selected from the group consisting of: glass, plastic, nylon and combinations thereof.

33. The catheter of Claim 29 wherein the non-conductive braid is embedded within the shaft.

Sub A3 34. The catheter of Claim 29 further comprising:
a conductor surrounded by at least a portion of the shaft; and
an ultrasound transducer electrically connected to the conductor.

35. The catheter of Claim 29 further comprising a control within the shaft.

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36. The catheter of Claim 1 wherein the non-conductive braid comprises liquid crystal polymer material.

37. The catheter of Claim 10 wherein the non-conductive insert comprises liquid crystal polymer material.

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